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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/981,794 | 10/19/2001 | Satoshi Kondo | 2001-1528A | 6966 |
| 513 | 7590 | 03/07/2006 | EXAMINER | |
| WENDEROTH, LIND & PONACK, L.L.P. | | | NATNAEL, PAULO S M | |
| 2033 K STREET N. W. | | | ART UNIT | |
| SUITE 800 | | | PAPER NUMBER | |
| WASHINGTON, DC 20006-1021 | | | 2614 | |

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/981,794

Applicant(s)

KONDO ET AL.

Examiner

Paulos M. Natnael

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-37 is/are allowed.
- 6) ☒ Claim(s) 1,3-6 and 9 is/are rejected.
- 7) ☒ Claim(s) 7 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims **1,2-9** have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims **1,3-6** and **9** are rejected under 35 U.S.C. 102(e) as being anticipated by Jiang et al., U.S. 6,459,455.

Considering claim **1**, Jiang et al. (hereinafter, "Jiang") discloses motion adaptive deinterlacing of video frames, measuring motion, and selecting the deinterlacing method based on the measure motion value. Jiang discloses in Fig.1 which shows a sequence of three consecutive fields of interlaced video signal and a corresponding deinterlaced output frame 18. In regards to the newly added limitation, Jiang teaches the value of the motion at a pixel location $m(x,y)$, is compared to threshold motion values...and is

then used to select a deinterlacing algorithm at that pixel location in the current frame.

See col. 3, lines 30-50. The reference of Jiang uses an interpolation weighing factor "alpha" in order to implement a linear interpolation method. (Col. 4, lines 1-34) Jiang also discloses a median filter (fig.5) to reduce unwanted artifacts in the resultant frame 18. Furthermore, Jiang teaches that: "FIG. 6 shows a process flow diagram of an embodiment of the present invention for accomplishing the motion adaptive deinterlacing process. At reference number 30 a pixel location in 20 output frame 18 is selected for de-interlacing. This is done iteratively to cover the entire frame. At 32 a motion value is determined for the selected pixel location. The motion may be directly calculated as the difference between values of the pixel at location 20 over a period of time. Optionally, the motion may be filtered as described above. A three-tap low pass filter, to reduce noise in the reference pixels is one such filter. Other motion filters may be used as well. At 34 a de-interlacing method is selected based upon the determined motion value for the selected pixel location. At 36 a pixel value is calculated for the selected pixel location in output frame 18. At 38, the pixel value is converted to RGB color space for final display. The conversion to RGB color space may be performed on a pixel-by-pixel basis, a frame-by-frame basis, or at any time prior to presenting the image on the display." (col. 6, line 62 to col. 7, line 13). [emphasis added by examiner]

As to claim 3, see fig.1 and disclosure of pixel locations 20, 22 and 24 and processing of the same.

Regarding claims **4-6**, Jiang discloses an exemplary definition of motion on col. 3, lines 22-25.

Considering claim **9**, Jiang discloses a median filter (Fig.5). The frame memory is inherent, because the frames of video signals may have to be stored at least temporarily while being processed and thus a frame memory must be included in the system of Jiang. Also, Jiang discloses a computer medium. Furthermore, Jiang discloses calculating the differences between pixels in fields 12, 14, and 16 to measure the motion (See col. 3, lines 30-50) and thus a difference operation is, again, inherently present. As to the filter coefficient setting unit, which is a comparison device and, therefore, is met by the disclosure on col. 3, lines 30-50 as well. Thus, Jiang discloses all claimed subject matter. (See also rejection of claim 1).

Allowable Subject Matter

4. Claims **10-37** remain allowable over the prior art.
5. Claims **7 and 8** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
6. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to disclose "wherein in said deciding of the filter coefficient,

the filter coefficient of the filter used in the filtering process is changed so that gain of components from the forward and backward fields of the de-interlacing target field is reduced as the quantity of the motion measured in said measuring of the quantity of motion is increased, as in claim 7; and, wherein in said deciding of the filter coefficient, the filter coefficient of the filter used in the filtering process is changed so that gain of components from the forward and backward fields of the de-interlacing target field is reduced to zero when the quantity of the motion measured in said measuring of the quantity of motion is large, as in claim 8;

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of


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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paulos M. Natnael whose telephone number is (571) 272-7354. The examiner can normally be reached on 9am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571)272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paulos M. Natnael
Primary Examiner
Art Unit 2614

March 1, 2006